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receivable in a second medical implant bone screw head between spaced arms wherein the first implant has a direction of advancement along an axis of rotation relative to the second implant; said threadform comprising:

- a) a leading surface that has an inner edge and an outer edge;
- b) a trailing surface that has an inner edge and an outer edge; and wherein
- c) intersections of a plane passing through said axis of rotation with both said leading surface and said trailing surface slope rearwardly relative to the direction of advancement from the respective inner edges to the outer edges thereof.

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11. The combination according to Claim 9 wherein:

- a) said threadform is in a helical pattern, but is discontinuous.

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13. A medical device comprising:

- a) a first implant having a head with a channel sized and shaped to receive a rod member and a pair of

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- spaced arms on opposite sides of said channel;
- b) a second closure implant for closing between said arms; said closure implant having an axis of rotation and a thread on an outer surface thereof; said thread being in a helical pattern on said closure implant and having a leading surface and a trailing surface; said leading surface having inner and outer edges and said trailing surface having inner and outer edges; intersections of both said leading surface and said trailing surface with a plane passing through said axis of rotation slope from respective inner to outer edges rearwardly with respect to a direction of advancement of said closure implant in closing said first implant; and
- c) each of said arms include a threadform on inner facing surfaces thereof sized and shaped to matingly and threadedly receive the thread of said closure implant.
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17. In a thread positioned on a closure for a medical implant and being sized and shaped to be threadedly

received between a pair of upright arms of a head of a bone screw; said thread having an axis of rotation with a leading surface and a trailing surface relative to advancement along the axis of rotation; the improvement comprising:

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- a) said trailing surface having an inner and an outer edge; said trailing surface sloping rearwardly from the inner edge to the outer edge thereof; and said inner edge having a generally constant radius over an entire length of said thread, such that, as said closure is advanced and applies force on a bottom side thereof, said thread resists splaying of said arms.

18. In a medical implant sized and shaped for closing between a pair of arms of a head of a bone screw and having a lower surface adapted to engage and apply pressure to a rod received in the head; said implant further having a cylindrical shaped outer surface with a thread wound in a helical pattern about said outer surface and wherein said thread has a leading surface and a trailing surface relative to advancement of the

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implant along an axis of rotation; the improvement comprising:

- a) said trailing surface having an inner and an outer edge; any intersection of said trailing surface with a plane passing through the axis of rotation slopes rearwardly from an inner radius to an outer radius of said trailing surface over substantially the entire length of said trailing surface.

19. In a thread located on a closure for a bone screw and adapted to be threadedly received between spaced arms of the bone screw; said thread having a leading surface and a trailing surface relative to advancement about an axis of rotation; the improvement comprising:

- a) both said leading and trailing surfaces having respective inner and outer edges; said trailing surface sloping rearwardly from the inner edge to the outer edge thereof; said trailing surface and leading surface inner edges being spaced and said trailing surface and leading surface outer edges being in close proximity to one another, such that said thread is generally triangular in cross-

section.

20. The thread according to Claim 19 wherein:

- a) said cross-section is generally in the shape of an obtuse triangle.

21. In a medical implant having a cylindrical shaped outer surface with a thread helically wound about said outer surface and wherein said implant is sized and shaped to be threadedly received between a pair of arms of a bone screw head and has a bottom surface adapted to abut against a rod received in said head; said thread having a leading surface and a trailing surface relative to advancement of the implant along an axis of rotation and further wherein both said trailing surface and said leading surface have respective inner and outer edges; the improvement comprising:

- a) said leading and trailing surfaces both sloping rearwardly from respective inner to outer edges thereof; said trailing surface and leading surface inner edges being spaced and said trailing surface and leading surface outer edges being in close

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proximity to each other over substantially the entire length of the thread such that the thread has a substantially triangular shaped cross section.

22. In a thread on a closure sized and shaped to be threadedly received between spaced arms of a bone screw head; said thread having a leading surface and a trailing surface relative to advancement about an axis of rotation; the improvement comprising wherein:
- a) both of the intersections of said leading surface and said trailing surface with a plane passing through the axis of rotation slope rearwardly from a radially inner edge to outer edge thereof; and
 - b) a first angle between the leading surface intersection and a line perpendicular to the axis of rotation is substantially greater than a second angle between the trailing surface intersection and a line perpendicular to the axis of rotation.

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26. In a thread on a closure sized and shaped to be threadedly received between spaced arms of a bone screw

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head; said thread having a leading surface and a trailing surface relative to advancement about an axis of rotation; the improvement comprising:

- a) said leading surface and said trailing surface being non-parallel; and
- b) an intersection of a plane with said trailing surface slopes rearwardly from an inner edge to an outer edge of said trailing surface.

The following are the amended claims noted above in a marked format indicating additions by underlining and deletions by bracketing:

1. (Amended) A threadform sized and shaped for and located on a first medical implant closure that is threadedly receivable in a second medical implant bone screw head between spaced arms wherein the first implant has a direction of advancement along an axis of rotation relative to the second implant; said

threadform comprising:

- a) a leading surface that has an inner edge and an outer edge;
- b) a trailing surface that has an inner edge and an outer edge; and wherein
- c) intersections of a plane passing through said axis of rotation with both said leading surface and said trailing surface slope rearwardly relative to the direction of advancement from the respective inner edges to the outer edges thereof.

11. (Amended) The combination according to Claim [1] 9

wherein:

- a) said threadform is in a helical pattern, but is discontinuous.

13. (Amended) A medical device comprising:

- a) a first implant having a head with a channel sized and shaped to receive a [rod-like] rod member and a pair of spaced arms on opposite sides of said channel;
- b) a second closure implant for closing between said

arms; said closure implant having an axis of rotation and a thread on an outer surface thereof; said thread being in a helical pattern on said closure implant and having a leading surface and a trailing surface; said leading surface having inner and outer edges and said trailing surface having inner and outer edges; intersections of both said leading surface and said trailing surface with a plane passing through said axis of rotation slope from respective inner to outer edges rearwardly with respect to a direction of advancement of said closure implant in closing said first implant; and

- c) each of said arms include a threadform on inner facing surfaces thereof sized and shaped to matingly and threadedly receive the thread of said closure implant.

17. (Amended) In a thread positioned on a closure for a medical implant and being sized and shaped to be threadedly received between a pair of upright arms of a head of a bone screw; said

thread having an axis of rotation with a leading surface and a trailing surface relative to advancement along the axis of rotation; the improvement comprising:

- a) said trailing surface having an inner and an outer edge; said trailing surface sloping rearwardly from the inner edge to the outer edge thereof; and said inner edge having a generally constant radius over an entire length of said thread, such that, as said closure is advanced and applies force on a bottom side thereof, said thread resists splaying of said arms.

18. (Amended) In a medical implant sized and shaped for closing between a pair of arms of a head of a bone screw and having a lower surface adapted to engage and apply pressure to a rod received in the head; said implant further having a cylindrical shaped outer surface with a thread wound in a helical pattern about said outer surface and wherein said thread has a leading surface and a trailing

surface relative to advancement of the implant along an axis of rotation; the improvement comprising:

- a) said trailing surface having an inner and an outer edge; any intersection of said trailing surface with a plane passing through the axis of rotation slopes rearwardly from an inner radius to an outer radius of said trailing surface over substantially the entire length of said trailing surface.

19. (Amended) In a thread located on a closure for a bone screw and adapted to be threadedly received between spaced arms of the bone screw; said thread having a leading surface and a trailing surface relative to advancement about an axis of rotation; the improvement comprising:

- a) both said leading and trailing surfaces having respective inner and outer edges; said trailing surface sloping rearwardly from the inner edge to the outer edge thereof; said trailing surface and leading surface inner edges being spaced and said

trailing surface and leading surface outer edges being in close proximity to one another, such that said thread is generally triangular in cross-section.

20. (Amended) The [implant] thread according to Claim 19 wherein:

- a) said cross-section is generally in the shape of an obtuse triangle.

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21. (Amended) In a medical implant having a cylindrical shaped outer surface with a thread helically wound about said outer surface and wherein said implant is sized and shaped to be threadedly received between a pair of arms of a bone screw head and has a bottom surface adapted to abut against a rod received in said head; said thread [has] having a leading surface and a trailing surface relative to advancement of the implant along an axis of rotation and further wherein both said trailing surface and said leading surface

have respective inner and outer edges; the improvement comprising:

- a) said leading and trailing surfaces both sloping rearwardly from respective inner to outer edges thereof; said trailing surface and leading surface inner edges being spaced and said trailing surface and leading surface outer edges being in close proximity to each other over substantially the entire length of the thread such that the thread has a substantially triangular shaped cross section.

22. (Amended) In a thread on a closure sized and shaped to be threadedly received between spaced arms of a bone screw head; said thread having a leading surface and a trailing surface relative to advancement about an axis of rotation; the improvement comprising wherein:

- a) both of the intersections of said leading surface and said trailing surface with a plane passing through the axis of rotation slope rearwardly from a radially inner edge to outer edge thereof; and

- b) a first angle between the leading surface intersection and a line perpendicular to the axis of rotation is substantially greater than a second angle between the trailing surface intersection and a line perpendicular to the axis of rotation.

26. (Amended) In a thread on a closure sized and shaped to be threadedly received between spaced arms of a bone screw head; said thread having a leading surface and a trailing surface relative to advancement about an axis of rotation; the improvement comprising:

- a) said leading surface and said trailing surface being non-parallel; and
- b) an intersection of a plane with [said] said trailing surface slopes rearwardly from an inner edge to an outer edge of said trailing surface.

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Please add the following claims which are intended to be identical to certain claims of the Morrison patent No. 6,296,642 renumbered:

27. A medical device, comprising:

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a receiver member including a plurality of wall sections defining a longitudinal bore in said medical device, said receiver member also including a transverse channel substantially perpendicular to said bore; and

a closure member including a substantially cylindrical engagement portion having a longitudinal axis, and a reverse angle thread formed on said engagement portion so that said engagement portion is adapted to be threadedly engaged within said bore to said wall sections.

28. The medical device of claim 27, wherein said wall sections include an inner reverse angle thread corresponding to said reverse angle thread of said engagement portion of said closure member, whereby said reverse angle thread of said wall sections and said reverse angle thread of said engagement portion are engaged when said engagement portion is threadedly engaged within said bore to said wall sections.

29. The medical device of claim 27, wherein said receiver member is a part of a bone fixation device.
30. The medical device of claim 29, wherein said bone fixation device is a bone screw.
31. The medical device of claim 29, wherein said reverse angle thread includes a rearward thread surface, wherein an angle measured from a plane normal with said longitudinal axis to said rearward thread surface is between about -1 degrees and -40 degrees.
32. The medical device of claim 31, wherein said angle is about -5 degrees.
33. The medical device of claim 27, wherein said closure member is a set screw.

34. An apparatus for connecting an elongated member and a bone, comprising:

a receiver member having an inner-threaded longitudinal bore, a channel communicating with and substantially perpendicular to said longitudinal bore for accommodating the elongated member and a fixation portion for fixing said receiver member to the bone; and

a closure member having a longitudinal axis and an outer threaded portion for threaded engagement with said threaded portion of said receiver member,

wherein said threaded portion of said receiver member and said threaded portion of said closure member include a reverse angle thread.

35. The apparatus of claim 34, wherein said reverse angle thread of said closure member includes a rearward

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thread surface such that an angle measured from a plane normal with said longitudinal axis to said rearward thread surface of said closure member is between about -1 degrees and -40 degrees, and said reverse angle thread of said receiver member includes a rearward thread surface such that an angle measured from a plane normal with an axis of said longitudinal bore to said rearward thread surface of said receiver member is between about -1 degrees and -40 degrees.

36. The apparatus of claim 35 wherein said closure member is a set screw.
37. The apparatus of claim 34 wherein said fixation portion is integral with said receiver member.
38. The apparatus of claim 34 wherein said fixation portion includes a threaded portion.

39. The apparatus of claim 34 wherein said bone fixation device is a bone screw.

40. A medical device, comprising:

a receiver member including a plurality of wall sections separated by a slot, said wall sections at least partially defining a longitudinal bore in said medical device; and

a closure member including a substantially cylindrical engagement portion having a longitudinal axis, and a reverse angle thread formed on said engagement portion so that said engagement portion is adapted to be threadedly engaged within said bore to said wall sections.

41. The medical device of claim 40, wherein said wall sections include an inner reverse angle thread

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corresponding to said reverse angle thread of said engagement portion of said closure member, whereby said reverse angle thread of said wall sections and said reverse angle thread of said engagement portion are engaged when said engagement portion is threadedly engaged within said bore to said wall sections.

42. The medical device of claim 40, wherein said receiver member includes a transverse channel substantially perpendicular to said longitudinal bore of said receiver member.

43. The medical device of claim 42, wherein said receiver member is a part of a bone fixation device.

44. The medical device of claim 43, wherein said bone fixation device is a bone screw.

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45. The medical device of claim 43, wherein said reverse angle thread includes a rearward thread surface, wherein an angle measured from a plane normal with said longitudinal axis to said rearward thread surface is between about -1 degrees and -40 degrees.
46. The medical device of claim 45, wherein said angle is about -5 degrees.
47. The medical device of claim 40, wherein said closure member is a set screw.
48. The medical device of claim 40, wherein a plurality of slots separate said wall sections.
49. The medical device of claim 48, wherein said plurality of slots form at least one channel transverse to said longitudinal bore.
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